

[0033] FIG. 6 is a view illustrating another example of a configuration of a semiconductor package.

[0034] Throughout the drawings and the detailed description, the same reference numerals refer to the same elements. The drawings may not be to scale, and the relative size, proportions, and depiction of elements in the drawings may be exaggerated for clarity, illustration, and convenience.

DETAILED DESCRIPTION

[0035] The following detailed description is provided to assist the reader in gaining a comprehensive understanding of the methods, apparatuses, and/or systems described herein. However, various changes, modifications, and equivalents of the methods, apparatuses, and/or systems described herein will be apparent to one of ordinary skill in the art. The sequences of operations described herein are merely examples, and are not limited to those set forth herein, but may be changed as will be apparent to one of ordinary skill in the art, with the exception of operations necessarily occurring in a certain order. Also, descriptions of functions and constructions that are well known to one of ordinary skill in the art may be omitted for increased clarity and conciseness.

[0036] The features described herein may be embodied in different forms, and are not to be construed as being limited to the examples described herein. Rather, the examples described herein have been provided so that this disclosure will be thorough and complete, and will convey the full scope of the disclosure to one of ordinary skill in the art.

[0037] Throughout the specification, it will be understood that when an element, such as a layer, region or wafer (substrate), is referred to as being “on,” “connected to,” or “coupled to” another element, it can be directly “on,” “connected to,” or “coupled to” the other element or other elements intervening therebetween may be present. In contrast, when an element is referred to as being “directly on,” “directly connected to,” or “directly coupled to” another element, there may be no elements or layers intervening therebetween. Like numerals refer to like elements throughout. As used herein, the term “and/or” includes any and all combinations of one or more of the associated listed items.

[0038] Unless indicated otherwise, a statement that a first layer is “on” a second layer or a substrate is to be interpreted as covering both a case where the first layer directly contacts the second layer or the substrate, and a case where one or more other layers are disposed between the first layer and the second layer or the substrate.

[0039] Words describing relative spatial relationships, such as “below,” “beneath,” “under,” “lower,” “bottom,” “above,” “over,” “upper,” “top,” “left,” and “right,” may be used to conveniently describe spatial relationships of one device or elements with other devices or elements. Such words are to be interpreted as encompassing a device oriented as illustrated in the drawings, and in other orientations in use or operation. For example, an example in which a device includes a second layer disposed above a first layer based on the orientation of the device illustrated in the drawings also encompasses the device when the device is flipped upside down in use or operation.

[0040] It will be apparent that though the terms first, second, third, etc. may be used herein to describe various members, components, regions, layers and/or sections, these members, components, regions, layers and/or sections

should not be limited by these terms. These terms are only used to distinguish one member, component, region, layer or section from another region, layer or section. Thus, a first member, component, region, layer or section discussed below could be termed a second member, component, region, layer or section without departing from the teachings of the exemplary embodiments.

[0041] Spatially relative terms, such as “above,” “upper,” “below,” and “lower” and the like, may be used herein for ease of description to describe one element’s relationship to another element(s) as shown in the figures. It will be understood that the spatially relative terms are intended to encompass different orientations of the device in use or operation in addition to the orientation depicted in the figures. For example, if the device in the figures is turned over, elements described as “above,” or “upper” other elements would then be oriented “below,” or “lower” the other elements or features. Thus, the term “above” can encompass both the above and below orientations depending on a particular direction of the figures. The device may be otherwise oriented (rotated 90 degrees or at other orientations) and the spatially relative descriptors used herein may be interpreted accordingly.

[0042] The terminology used herein is for describing particular embodiments only and is not intended to be limiting of the present disclosure. As used herein, the singular forms “a,” “an,” and “the” are intended to include the plural forms as well, unless the context clearly indicates otherwise. It will be further understood that the terms “comprises,” and/or “comprising” when used in this specification, specify the presence of stated features, integers, steps, operations, members, elements, and/or groups thereof, but do not preclude the presence or addition of one or more other features, integers, steps, operations, members, elements, and/or groups thereof.

[0043] FIG. 1 is a cross-sectional view of an example schematically illustrating a semiconductor package, while FIG. 2 is a plan view illustrating an example of a semiconductor chip in the semiconductor package of FIG. 1.

[0044] Referring to FIGS. 1 and 2, a semiconductor package 100 includes a board 110, a semiconductor chip 120, an adhesive layer 130, and a sensor unit 140. The semiconductor chip 120 may be an application specific integrated circuit (ASIC) chip.

[0045] The board 110 may have a plate shape and may have a patterned layer (not shown). An electrode layer (not shown) allowing the semiconductor chip 120 to be mounted thereon may be provided on an upper surface of the board 110. That is, the semiconductor chip 120 may be mounted on the board 110.

[0046] The semiconductor chip 120 is mounted on the board 110. An installation recess 122 is formed on the semiconductor chip 120 through an etching process or another similar process used during microfabrication. The installation recess 122 is formed on the underside of the semiconductor chip 120.

[0047] When the semiconductor chip 120, of which the underside surface thereof has been etched, is reversibly mounted on the board 110 and a sensor unit 140 is disposed thereon, a thickness corresponding to the etching depth is gained in reducing the overall profile of the semiconductor package 100.

[0048] When viewed top-down, the installation recess 122 provided on the semiconductor chip 120 may have a quad-